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SEQUENCE LISTING

<110> Egelrud, Torbjorn
Hansson, Lennart

<120> SCCE modified transgenic mammals and
their use as models of human diseases

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<213> Rattus norvegicus

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Gln Gly Glu Arg Ile Ile Asp Gly Tyr Lys Cys Lys Glu Gly Ser His
 1 5 10 15
 Pro Trp Gln Val Ala Leu Leu Lys Gly Asp Gln Leu His Cys Gly
 20 25 30

8

<210> 13
 <211> 31
 <212> PRT
 <213> Mus musculus

<400> 13
 Gln Gly Glu Arg Ile Ile Asp Gly Ile Lys Cys Lys Glu Gly Ser His
 1 5 10 15
 Pro Trp Gln Val Ala Leu Leu Lys Gly Asn Gln Leu His Cys Gly
 20 25 30

<210> 14
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Consensus sequence for cleavage site in C-terminal
 of SCCE.

<221> VARIANT
 <222> 2
 <223> Asp = either aspartate (Asp) or glutamate (Glu).

<221> VARIANT
 <222> 3
 <223> Lys = either lysine (Lys) or arginine (Arg).

<400> 14
 Gly Asp Lys Ile Ile Asp Gly
 1 5

<210> 15
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> consensus of the substrate specificity pouch.

<221> VARIANT
 <222> 1
 <223> Thr = any amino acid residue.

<221> VARIANT
 <222> 3
 <223> Ala = any amino acid residue.

<221> VARIANT
 <222> 5
 <223> Asn = any amino acid residue.

<400> 15
 Thr Asn Ala Cys Asn Gly Asp Ser
 1 5

9

<210> 16
<211> 20
<212> DNA
<213> Artificial sequence

<220>
<223> PCR primer SYM3300.

<400> 16
ggtggccctg ctcagtggca 20

<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM3301.

<400> 17
caccatggat gacacagcct gg 22

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM3302.

<400> 18
aataaagaaa cacaaaaccc 20

<210> 19
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM3418.

<400> 19
tgtaatatca ttgtgggc 18

<210> 20
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM4118.

<400> 20
ggatgtgaag ctcattctc 18

<210> 21
<211> 18

10

<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM4121.

<400> 21
tggagtcggg gatgccag

18

<210> 22
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM4720.

<400> 22
gggaggggtgg agagagagtg cagtg

25

<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer SYM4899.

<400> 23
agtctaggct gcagccccta c

21

<210> 24
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer hEXON1.

<400> 24
ctcgagggat ctgatgtgat cc

22

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEXON1.

<400> 25
ctgggagtga cttggcgtgg ctct

24

<210> 26
<211> 23
<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer specific for human SCCE IE2.

<400> 26
gctctcccat tagtccccag aga 23

<210> 27
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR primer specific for human SCCE MJ2.

<400> 27
ccacttggtg aacttgcaca cttg 24

<210> 28
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer covering the position 427 - 444 of the human SCCE cDNA sequence.

<400> 28
gggaaccccc tggaacaa 18

<210> 29
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer covering the position 490 - 510 of the human cDNA sequence in exon five.

<400> 29
acatccacgc acatgaggtc a 21

<210> 30
<211> 29
<212> DNA
<213> Artificial Sequence

<220>

<223> The real time amplification probe covering the position 445 - 473 of the human cDNA sequence in exon four.

<400> 30
cctgtactgt ctccggctgg ggcactacc 29

12

<210> 31
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mS3.

<400> 31
caaggagaaa ggattataga tggct

25

<210> 32
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer 698.

<400> 32
aaggctccgc acccatggca g

21

<210> 33
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer 696.

<400> 33
tgcaatggtg actcaggggg gccctt

26

<210> 34
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer H2.

<400> 34
gacccaggcg tctacactca agt

23

<210> 35
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mS4.

<400> 35
gagaccatga aaacccatcg ctaac

25

<210> 36

13

<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer KO 0905.

<400> 36
tgactttctt cacactggac gacagc

26

<210> 37
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer GR 0905.

<400> 37
cttcacactg gctgatagcc tggccg

26

<210> 38
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer Ngr.

<400> 38
cagggtggcg gaatgacctc atggccct

28

<210> 39
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer RA 1016.

<400> 39
ctactccaca aggacccatg tcaatgac

28

<210> 40
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer nRA 1016.

<400> 40
gctgtgtgct ggcattcccg actctaag

28

<210> 41
<211> 30

14

<212> DNA
<213> Artificial Sequence

<220>
<223> SMART II oligonucleotide.

<400> 41
aagcagtggg aacaacgcag agtacgcggg 30

<210> 42
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> 5'-RACE cDNA synthesis primer.

<221> variation
<222> 27
<223> n = a or g or c or t

<400> 42
tttttttttt tttttttttt tttttvn 27

<210> 43
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Long universal primer.

<400> 43
ctaatacgac tcactatagg gcaagcagtg gtaacaacgc agagt 45

<210> 44
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Short universal primer.

<400> 44
ctaatacgac tcactatagg gcc 23

<210> 45
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Nested universal primer.

<400> 45
aagcagtggg aacaacgcag agt 23

<210> 46
<211> 243
<212> PRT

15

<213> Artificial Sequence

<220>

<223> Deduced amino acid sequence from the C-terminal
part of SCCE from cow.

<400> 46

```

Met Thr Thr Pro Leu Val Ile Leu Leu Leu Thr Phe Ala Leu Gly Ser
 1          5          10          15
Val Ala Gln Glu Asp Gln Gly Asn Lys Ser Gly Glu Lys Ile Ile Asp
          20          25          30
Gly Val Pro Cys Pro Arg Gly Ser Gln Pro Trp Gln Val Ala Leu Leu
          35          40          45
Lys Gly Ser Gln Leu His Cys Gly Gly Val Leu Leu Asn Glu Gln Trp
          50          55          60
Val Leu Thr Ala Ala His Cys Met Asn Glu Tyr Asn Val His Met Gly
          65          70          75          80
Ser Val Arg Leu Val Gly Gly Gln Lys Ile Lys Ala Thr Arg Ser Phe
          85          90          95
Arg His Pro Gly Tyr Ser Thr Gln Thr His Ala Asn Asp Leu Met Leu
          100          105          110
Val Lys Leu Asn Gly Arg Ala Lys Leu Ser Ser Ser Val Lys Lys Val
          115          120          125
Asn Leu Pro Ser His Cys Asp Pro Pro Gly Thr Met Cys Thr Val Ser
          130          135          140
Gly Trp Gly Thr Thr Thr Ser Pro Asp Val Thr Phe Pro Gly Gln Leu
          145          150          155          160
Met Cys Thr Asp Val Lys Leu Ile Ser Pro Gln Asp Cys Arg Lys Val
          165          170          175
Tyr Lys Asp Leu Leu Gly Asp Ser Met Leu Cys Ala Gly Ile Pro Asn
          180          185          190
Ser Arg Thr Asn Ala Cys Asn Gly Asp Ser Gly Gly Pro Leu Met Cys
          195          200          205
Lys Gly Thr Leu Gln Gly Val Val Ser Trp Gly Ser Phe Pro Cys Gly
          210          215          220
Gln Pro Asn Asp Pro Gly Val Tyr Thr Gln Val Cys Lys Tyr Val Asn
          225          230          235          240
Trp Ile Lys

```

<210> 47

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Deduced amino acid sequence from the C-terminal
part of SCCE from pig.

<400> 47

```

Met Ala Arg Pro Leu Leu Pro Pro Arg Leu Ile Leu Leu Leu Ser Leu
 1          5          10          15
Ala Leu Gly Ser Ala Ala Gln Glu Gly Gln Asp Lys Ser Gly Glu Lys
          20          25          30
Ile Ile Asp Gly Val Pro Cys Pro Gly Gly Ser Arg Pro Trp Gln Val
          35          40          45
Ala Leu Leu Lys Gly Asn Gln Leu His Cys Gly Gly Val Leu Val Asn
          50          55          60
Gln Gln Trp Val Leu Thr Ala Ala His Cys Met Met Asn Asp Tyr Asn
          65          70          75          80

```

16

Val His Leu Gly Ser Asp Arg Leu Asp Asp Arg Lys Gly Gln Lys Ile
 85 90 95
 Arg Ala Met Arg Ser Phe Arg His Pro Gly Tyr Ser Thr Gln Thr His
 100 105 110
 Val Asn Asp Leu Met Leu Val Lys Leu Ser Arg Pro Ala Arg Leu Ser
 115 120 125
 Ala Ser Val Lys Lys Val Asn Leu Pro Ser Arg Cys Glu Pro Pro Gly
 130 135 140
 Thr Thr Cys Thr Val Ser Gly Trp Gly Thr Thr Thr Ser Pro Asp Val
 145 150 155 160
 Thr Phe Pro Ala Asp Leu Met Cys Thr Asp Val Lys Leu Ile Ser Ser
 165 170 175
 Gln Asp Cys Lys Lys Val Tyr Lys Asp Leu Leu Gly Ser Ser Met Leu
 180 185 190
 Cys Ala Gly Ile Pro Asn Ser Lys Thr Asn Ala Cys Asn Gly Asp Ser
 195 200 205
 Gly Gly Pro Leu Val Cys Lys Gly Thr Leu Gln Gly Leu Val Ser Trp
 210 215 220
 Gly Thr Phe Pro Cys Gly Gln Pro Asn Asp Pro Gly Val Tyr Thr Gln
 225 230 235 240
 Val Cys Lys Tyr Ile Asp Trp Ile Asn
 245

<210> 48

<211> 253

<212> PRT

<213> Artificial Sequence

<220>

<223> Deduced amino acid sequence from the C-terminal
part of SCCE from homo.

<400> 48

Met Ala Arg Ser Leu Leu Pro Leu Gln Ile Leu Leu Leu Ser Leu
 1 5 10 15
 Ala Leu Glu Thr Ala Gly Glu Glu Ala Gln Gly Asp Lys Ile Ile Asp
 20 25 30
 Gly Ala Pro Cys Ala Arg Gly Ser His Pro Trp Gln Val Ala Leu Leu
 35 40 45
 Ser Gly Asn Gln Leu His Cys Gly Gly Val Leu Val Asn Glu Arg Trp
 50 55 60
 Val Leu Thr Ala Ala His Cys Lys Met Asn Glu Tyr Thr Val His Leu
 65 70 75 80
 Gly Ser Asp Thr Leu Gly Asp Arg Arg Ala Gln Arg Ile Lys Ala Ser
 85 90 95
 Lys Ser Phe Arg His Pro Gly Tyr Ser Thr Gln Thr His Val Asn Asp
 100 105 110
 Leu Met Leu Val Lys Leu Asn Ser Gln Ala Arg Leu Ser Ser Met Val
 115 120 125
 Lys Lys Val Arg Leu Pro Ser Arg Cys Glu Pro Pro Gly Thr Thr Cys
 130 135 140
 Thr Val Ser Gly Trp Gly Thr Thr Thr Ser Pro Asp Val Thr Phe Pro
 145 150 155 160
 Ser Asp Leu Met Cys Val Asp Val Lys Leu Ile Ser Pro Gln Asp Cys
 165 170 175
 Thr Lys Val Tyr Lys Asp Leu Leu Glu Asn Ser Met Leu Cys Ala Gly
 180 185 190
 Ile Pro Asp Ser Lys Lys Asn Ala Cys Asn Gly Asp Ser Gly Gly Pro
 195 200 205
 Leu Val Cys Arg Gly Thr Leu Gln Gly Leu Val Ser Trp Gly Thr Phe

17

210		215		220
Pro Cys Gly Gln Pro Asn Asp Pro Gly Val Tyr Thr Gln Val Cys Lys				
225		230		235
Phe Thr Lys Trp Ile Asn Asp Thr Met Lys Lys His Arg				240
	245		250	

<210> 49
 <211> 226
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Deduced amino acid sequence from the C-terminal
 part of SCCE from rat.

<400> 49
 Met Gly Val Trp Leu Leu Ser Leu Leu Thr Val Leu Leu Ser Leu Ala
 1 5 10 15
 Leu Glu Thr Ala Gly Gln Gly Glu Arg Ile Ile Asp Gly Tyr Lys Cys
 20 25 30
 Lys Glu Gly Ser His Pro Trp Gln Val Ala Leu Leu Lys Gly Asp Gln
 35 40 45
 Leu His Cys Gly Gly Val Leu Val Gly Glu Ser Trp Val Leu Thr Ala
 50 55 60
 Ala His Cys Lys Met Gly Gln Tyr Thr Val His Leu Gly Ser Asp Lys
 65 70 75 80
 Ile Glu Asp Gln Ser Ala Gln Arg Ile Lys Ala Ser Arg Ser Phe Arg
 85 90 95
 His Pro Gly Tyr Ser Thr Arg Thr His Val Asn Asp Ile Met Leu Val
 100 105 110
 Lys Met Asp Lys Pro Val Lys Met Ser Asp Lys Val Gln Lys Val Lys
 115 120 125
 Leu Pro Asp His Cys Glu Pro Pro Gly Thr Leu Cys Thr Val Ser Gly
 130 135 140
 Trp Gly Thr Thr Thr Ser Pro Asp Val Thr Phe Pro Ser Asp Leu Met
 145 150 155 160
 Cys Ser Asp Val Lys Leu Ile Ser Ser Gln Glu Cys Lys Lys Val Tyr
 165 170 175
 Lys Asp Leu Leu Gly Lys Thr Met Leu Cys Ala Gly Ile Pro Asp Ser
 180 185 190
 Lys Thr Asn Thr Cys Asn Gly Asp Ser Gly Gly Pro Leu Val Cys Asn
 195 200 205
 Asp Thr Leu Gln Gly Leu Val Ser Trp Gly Thr Tyr Pro Cys Gly Gln
 210 215 220
 Pro Asn
 225

<210> 50
 <211> 249
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Deduced amino acid sequence from the C-terminal
 part of SCCE from mouse.

<400> 50
 Met Gly Val Trp Leu Leu Ser Leu Ile Thr Val Leu Leu Ser Leu Ala
 1 5 10 15

18

Leu	Glu	Thr	Ala 20	Gly	Gln	Gly	Glu	Arg 25	Ile	Ile	Asp	Gly	Ile 30	Lys	Cys
Lys	Glu	Gly	Ser 35	His	Pro	Trp	Gln 40	Val	Ala	Leu	Leu	Lys 45	Gly	Asn	Gln
Leu	His 50	Cys	Gly	Gly	Val	Leu 55	Val	Asp	Lys	Tyr	Trp 60	Val	Leu	Thr	Ala
Ala 65	His	Cys	Lys	Met	Gly 70	Gln	Tyr	Gln	Val	Gln	Leu	Gly	Ser	Asp	Lys 80
Ile	Gly	Asp	Gln	Ser 85	Ala	Gln	Lys	Ile	Lys 90	Ala	Thr	Lys	Ser	Phe	Arg
His	Pro	Gly	Tyr 100	Ser	Thr	Lys	Thr	His 105	Val	Asn	Asp	Ile	Met 110	Leu	Val
Arg	Leu	Asp 115	Glu	Pro	Val	Lys	Met 120	Ser	Ser	Lys	Val	Glu	Ala	Val	Gln
Leu	Pro 130	Glu	His	Cys	Glu	Pro 135	Pro	Gly	Thr	Ser	Cys 140	Thr	Val	Ser	Gly
Trp 145	Gly	Thr	Thr	Thr	Ser 150	Pro	Asp	Val	Thr	Phe 155	Pro	Ser	Asp	Leu	Met 160
Cys	Ser	Asp	Val	Lys 165	Leu	Ile	Ser	Ser	Arg 170	Glu	Cys	Lys	Lys	Val	Tyr 175
Lys	Asp	Leu	Leu 180	Gly	Lys	Thr	Met	Leu 185	Cys	Ala	Gly	Ile	Pro 190	Asp	Ser
Lys	Thr	Asn 195	Thr	Cys	Asn	Gly	Asp 200	Ser	Gly	Gly	Pro	Leu 205	Val	Cys	Asn
Asp	Thr 210	Leu	Gln	Gly	Leu	Ala 215	Ser	Arg	Gly	Thr	Tyr 220	Pro	Cys	Gly	Gln
Pro 225	Asn	Asp	Pro	Gly	Val 230	Tyr	Thr	Gln	Val	Cys 235	Lys	Tyr	Lys	Arg	Trp 240
Val	Met	Glu	Thr	Met 245	Lys	Thr	His	Arg							

Ly
Ly
As
Pr
22
Va